

GOVERNMENT OF INDIA  
METEOROLOGICAL DEPARTMENT

# INDIA WEATHER REVIEW, 1962

## Annual Summary

### PART B

### SNOWFALL

QC  
990  
J39  
I52a  
pt. B  
1962

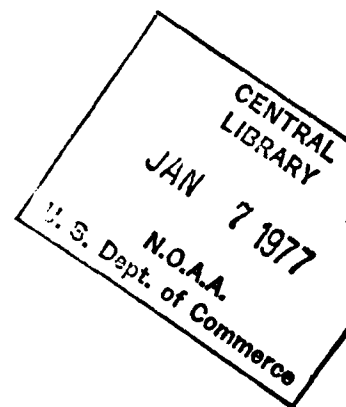
#### CONTENTS

	Pages		Pages
Cold Weather Period . . . . .	B-1	Post Monsoon Period . . . . .	B-16
Hot Weather Period . . . . .	B-8	Summary . . . . .	B-21
South-West Monsoon Period . . . . .	B-13		

Published by the Authority of the Government of India

Under the Direction of

C. RAMASWAMY M.A. F.A.Sc.  
Director General of Observatories



PRINTED ON THE ROTAPRINT AT METEOROLOGICAL OFFICE, POONA.  
PUBLISHED BY : MANAGER OF PUBLICATIONS, DELHI.

Copyright (C), Manager of Publications, Delhi-8.  
Price Inland Rs. 2-75,  
Foreign £ 0-32 or 99 cents

# **National Oceanic and Atmospheric Administration**

## **Environmental Data Rescue Program**

### **ERRATA NOTICE**

One or more conditions of the original document may affect the quality of the image, such as:

Discolored pages

Faded or light ink

Binding intrudes into the text

This document has been imaged through the NOAA Environmental Data Rescue Program. To view the original document, please contact the NOAA Central Library in Silver Spring, MD at (301) 713-2607 x124 or [www.reference@nodc.noaa.gov](mailto:www.reference@nodc.noaa.gov).

Information Manufacturing Corporation  
Imaging Subcontractor  
Rocket Center, West Virginia  
September 14, 1999

# INDIA WEATHER REVIEW, 1962

## ANNUAL SUMMARY — PART B

### SNOWFALL

This part contains a summary of the reports of snowfall in the mountain regions to the north of India based on (a) records of snowfall observations made at the observatories and (b) reports collected by local officers from the local residents, headmen of villages or from travellers who have passed through the region, and then transmitted to this office.

The amount of snowfall is usually measured by finding the depth of undisturbed snow lying on the ground. The measurements are given in metres or centimetres. At places provided with raingauges the snow, collected in the gauge, is melted and measured as rain. The heights of well-known peaks are reported in the nearest metres, wherever available, while the heights of mountain ranges etc. are reported in tens of metres. In the description, the figures given for depths for a month indicate the total amount of snowfall which occurred during that month.

#### Cold Weather/ Winter Period - January and February

##### I. JAMMU AND KASHMIR

###### SOUTH ANANTNAG DISTRICT

Srinagar (1585 m.) - Slight snowfall was observed in the valley and on the surrounding hills on the 27th January. These regions experienced snowfall again on three days in the second week and on one day in the third week of February. Accumulation of snow was visible on all the surrounding peaks during both the months.

The snowfall was below normal during the period.

###### UDHAMPUR DISTRICT

Patnitop (Batote) (2033 m.) - In January, light snowfall was observed on the 27th on Pir Panjal (4090 m. - 4110 m.) and Ensin Dhar (2700 m. - 3350 m.). In February, snow fell on three days on Eastern Pir Panjal, Ensin Dhar, Kud peaks (2700 m. - 3350 m.), Kud (1700 m.), Batote (1680 m.), Sansar (2290 m.) and Patnitop (2130 m.). Accumulation of snow was present at elevations above 2130 m. at the ends of both the months.

The snowfall was below normal in both the months.

###### LADAKH DISTRICT

Kargil (2679 m.) - The report for January was not received. There were three snowfalls on the 3th, 11th and 16th February, the total depths being 17 cm. at the station proper, 46 cm. on Naktul peak and 15 cm. on Hurker peak.

The snowfall was normal in February.

Leh (3514 m.) - Snowfall occurred on the 6th and 27th January and in a spell of four days in the second week of February. The respective depths in these months were 9 cm. and 26 cm. The accumulations of snow at heights of 5490 m. to 6100 m. were reported as 60 cm. to 90 cm. in January and as 60 cm. in February.

The snowfall was below normal in January and above normal in February.

Khangral - There was no snowfall in January. The report for February was not received.

II. PUNJAB (I) AND HIMACHAL PRADESHCHAMBA DISTRICTChurah

Tissa (1570 m.) - The station experienced snowfall on the 27th January and again on the 7th, 8th and 12th February. The corresponding depths in these months were 1 cm. and 30 cm.

Tissa Range - Snowfalls occurred on four days in the second and last weeks of January and on the 7th, 8th, 12th and 24th February. The total depths in these months were 41 cm. and 48 cm. respectively. The lowest heights to which the snowfall descended on the range were 1830 m. in January and 1220 m. in February. The amounts of snow accumulation on some well-known passes were as under :-

Name of pass	Accumulation	
	January	February
Sach (4410 m.)	4.9 m.	3.7 m.
Chehni (4570 m.)	5.5 m.	4.3 m.
Marali (2740 m.)	1.2 m.	50 cm.

The snowfall was below normal in January and about normal in February.

Bhandal Range - Snowfall was reported in the last week of January. The depth of accumulation of snow on Padhri pass was 1.8 m. The report for February was not received.

The snowfall was below normal in January.

Chamba

Chamba (924 m.) - The station proper did not receive any snowfall during the period. The snowfalls descended to heights of 1540 m. in January and 1570 m. in February on the surrounding areas. The amounts of snow accumulation on the passes were as under :-

Name of pass	Accumulation	
	January	February
Basodhan (2740 m.)	60 cm.	30 cm.
Sach (4420 m.)	3.0 m.	4.3 m.

The snowfall was reported to be normal during the period.

Ludrera (924 m.) - No snow fell during the period.

Bhanota (914 m.) - No snow fell during the period.

Upper Chamba Range :

Chhattrari (1793 m.) - Snowfalls occurred on the 22nd and 26th January and again on the 8th and 9th February, the total depths being 15 cm. and 8 cm. respectively at the station proper. Heavier falls were reported to have occurred on the range in both the months. The depths of snowfall were 1.2 m. each on Ghator and Baliani passes in January and 3.0 m. on Baliani pass in February. The snowfalls were experienced at heights above 1540 m. and 1570 m. in the respective months. There was no accumulation of snow at the end of each month.

The snowfall was below normal during the period.

#### Rhattiyat

Kalatop (Dalhousie Range) (2414 m.) - There occurred three snowstorms at Kalatop and two at Banikhet (1370 m.) during the second fortnight of January, the respective total depths being 79 cm. and 46 cm. February witnessed eleven snowstorms, the total depth of snowfall at Kalatop being 2.4 m. The heaviest falls at Kalatop were 46 cm. on 26th January and 91 cm. on 12th February. The amounts of snow accumulation at Kalatop and Laker Mandi were 79 cm. and 91 cm. respectively in January and 91 cm. and 1.1 m. respectively in February.

The snowfall was below normal in January and above normal in February.

Chowari (1021 m.) - No snow fell during both the months.

Bathree (1372 m.) - No snow fell during January. The report for February was not received.

Trehta Range - Snowfalls occurred on two days in the last week of January and on four days in February, mostly in the first fortnight. In both these months lower elevations of 1520 m. experienced snowfall. The depth of snowfall recorded at Holi village was about 5 cm. in February. The depths of snowfall and the amounts of snow accumulation at the end of each of the months were reported as under :-

Name of pass	<u>Depth of snowfall</u>		<u>Accumulation</u>	
	January	February	January	February
Jalsu (3810 m.)	50 cm.	90 cm.	2.9 m.	3.4 m.
Kwarsi (4420 m.)	75 cm.	1.4 m.	4.0 m.	4.6 m.

The snowfall was below normal during the period.

#### Bharmaur

Bharmaur (2155 m.) - The station experienced snowfall on four days in January, of which three were in the second fortnight. In February snowfall occurred on ten days in spells of two to three days. The total depths recorded in the respective months were 45 cm. and 80 cm.

The snowfall was below normal in January and almost normal in February.

#### MAHASU DISTRICT

Chopal (2342 m.) - There were four days of snowfall in the third week of January, the total depths being 1.0 m. at the station proper and 1.8 m. to 3.7 m. on the high peaks. The snowfall descended to the lower elevations of 760 m. in the tehsil and communications were suspended during the month. Snowfall was experienced again on 8th and 19th February, the depths being 38 cm. at the station proper, 45 cm. on the higher peaks and about 1.1 m. on the highest peak of Chur Dhar. The amounts of accumulation of snow on some well-known locations at the ends of the months were reported as under :-

Name of location	<u>Accumulation</u>	
	January	February
Chopal	60 cm.	0
Chur Dhar	3.7 m.	55 cm.
Chhattar	2.1 m.	65 cm.

Name of location	Accumulation	
	January	February
Mandha Ghati	1.8 m.	65 cm.
Khirki	1.8 m.	65 cm.
Talra	1.8 m.	65 cm.

The snowfall was above normal in January and slightly below normal in February.

Shilaroo (2591 m.) - Fairly heavy snowstorms were experienced on the 13th, 21st, 26th and 27th January, the total depth being 1.2 m. These storms extended to lower elevations of 1300 m. The heaviest fall recorded at the station was 70 cm. on the 21st January. The accumulation at the end of the month was 1.6 m. The report for February was not received.

The snowfall was above normal in January.

Phancha (Pandra Bis Range) (2271 m.) - Snowfall occurred on four days in January, of which three were in the last week, and on ten days in February of which six were in the first fortnight. The heaviest fall during the period was 38 cm. on the 9th February. The total depths of snowfall at the station were 45 cm. in January and 1.8 m. in February. The same amounts were reported as the accumulations at the ends of the respective months.

The snowfall was below normal during the period.

Junga (1989 m.) - No snow fell during the period.

Rampur (1067 m.) - Snowfall occurred on four days in the third week of January. In the first spell on the 21st-22nd, the snowfalls were experienced throughout the Tehsil at heights of 910 m. The second spell on the 26th-27th January was confined to heights above 1520 m. In February there were two snowfalls which were experienced at higher levels of 1680 m. The depth of snowfall at Rampur was 8 cm. in January. The snow accumulations on the high peaks at the ends of January and February were 1.5 m. and 90 cm. respectively.

The snowfall was below normal during the period.

Kumarsain (1388 m.) - Snow fell on three days in the third week of January at heights above 910 m. The depths of snow at the station proper and on Narkanda peak (2740 m.) were 45 cm. and 90 cm. respectively. In February snowfall occurred at heights above 2290 m. on nine days in three spells in the second, third and last weeks. The depth of snowfall at Narkanda was 75 cm. The same amounts as the depths were reported as the accumulations at the ends of the respective months.

The snowfall was below normal during the period.

Theog (2286 m.) - The depths of snowfall were 1.1 m. in January and 18 cm. in February. The amounts of snow accumulation on the well-known peaks of Tir Mahasu and Kanagi were 1.5 m. each at the end of January.

The snowfall was above normal in January and below normal in February.

Kotgarh (1829 m.) - The station experienced a severe snowstorm on the 21st January and a moderate one on the 26th, the total depth amounting to 75 cm. Snowfalls were again reported on the 7th and 8th February, the total depth being 25 cm. The heaviest fall during the period was 60 cm. on the 21st-22nd January. Accumulation of snow amounting to 1.2 m. was present at the end of January only.

Kotkhai (1675 m.) - There were two days of snowfall in the last week of January and six days in the first half of February. The depths of snowfall at the station proper

were 38 cm. in January and 13 cm. in February. The corresponding depths were about 1.4 m. and 90 cm. on the surrounding peaks such as Naira (2290 m.), Joshla (2440 m.), Mundroo (2440 m.), Khara Pathar (2590 m.) and Bagi (2740 m.).

The snowfall was normal during the period.

Suni (510 m.) - The report for January was not received. Snowfall was reported on four days during February, the total depth being 33 cm. The snowfalls occurred above heights of 1520 m. No accumulation of snow was present at the end of the period.

The snowfall was normal in February.

Lower Pabar Range - In January, the total depths of snowfalls at Bashla (2286 m.) and Khadralla (2957 m.) were 81 cm. and 1.8 m. respectively. The corresponding depths in February were 81 cm. and 2.3 m.

The snowfall on the range was normal in January and much above normal in February.

Rohru (1524 m.) - Snowfall was recorded on the 22nd, 25th and 26th January and on the 8th and 19th February. The total depths of snowfall were 55 cm. in January and 20 cm. in February. The amounts of snow accumulation were as under :-

Name of pass	Accumulation	
	January	February
Khadralla	1.8 m.	2.1 m.
Sungri	1.8 m.	2.1 m.
Chansal	4.6 m.	4.9 m.

The snowfall was normal in January and below normal in February.

Arki (1219 m.) - Only one snowstorm, extending throughout the tehsil was experienced on the 22nd January. The depths of snowfall were 30 cm. on Bari Dhar (2070 m.) and 15 cm. on Kamaghoo pass (1650 m.). There was no accumulation of snow at the end of the month. The report for February was not received.

The snowfall was normal in January.

Solan (1530 m.) - Snowfall occurred on the 22nd and 27th January, the total amount being 25 cm. No snow was experienced in February.

The snowfall was normal in January and below normal in February.

Jubbai (1891 m.) - No snow fell at the station proper during the period.

Jubbai Forest Division - Snowfalls were experienced at heights above 760 m. in the latter part of January and on two days in February. The total depths of snowfall and the maximum depths reported in one day at some important places are given below:

Name of place	Depth of snowfall			
	January		February	
	Total	Maximum	Total	Maximum
Bhoj Dhar (2130 m.)	70 cm.	70 cm.	23 cm.	15 cm.
Deya (2230 m.)	75 cm.	75 cm.	20 cm.	13 cm.
Tharoach (2080 m.)	60 cm.	60 cm.	15 cm.	10 cm.
Banah (2130 m.)	1.2 m.	45 cm.	35 cm.	20 cm.

Name of Place	Depth of snowfall			
	January		February	
	Total	Maximum	Total	Maximum
Manalag (2530 m.)	1.5 m.	60 cm.	55 cm.	30 cm.
Reoshti (2290 m.)	1.0 m.	45 cm.	30 cm.	18 cm.
Mandha Ghati pass (2590 m.)	2.7 m.	1.2 m.	1.5 m.	90 cm.
Chhachpur (2110 m.)	2.9 m.	1.8 m.	45 cm.	25 cm.
Chuhar peak (3560 m.)	4.3 m.	1.8 m.	1.8 m.	90 cm.
Bharach (3080 m.)	3.4 m.	2.0 m.	1.8 m.	1.5 m.
Ori (2680 m.)	2.3 m.	1.4 m.	75 cm.	60 cm.

The amounts of snow accumulation at the end of each month were as under :-

Name of place	Accumulation	
	January	February
Manalag	1.5 m.	55 cm.
Reoshti	1.3 m.	30 cm.
Mandha Ghati Pass	1.8 m.	60 cm.
Chhachpur	1.8 m.	90 cm.
Chuhar peak	2.7 m.	2.4 m.
Bharach	2.0 m.	1.8 m.

The snowfall was normal during the period.

Kasumpti (1989 m.) - The station reported 70 cm. depth of snowfall in January. No snow fell in February.

The snowfall was above normal in January and below normal in February.

#### KINNAUR DISTRICT

##### Kilba-Kailash Range

(i) Kilba (1829 m.) - Snowfall was reported during January and February; the corresponding total depths in these months were 5 cm. and 20 cm.

The snowfall was below normal during the period.

(ii) Sangla (2591 m.) - The station experienced snowfall in both the months, the total depths being 28 cm. in January and 93 cm. in February.

The snowfall was below normal in January and above normal in February.

(iii) Purbani (2286 m.) - Snowfall occurred at the station in both January and February, the total depths being 13 cm. and 1.1 m. respectively.

The snowfall was below normal in January and above normal in February.

Chini (2774 m.) - The depths of snowfall reported by the station were 23 cm. in January and 1.1 m. in February.

The snowfall was below normal in January and above normal in February.

Kalpa - Snowfall occurred in both the months, the depths being 10 cm. in January and 1.1 m. in February.

#### KANGRA DISTRICT

Banjar (Inner Seraj Sub-Tehsil) (540 m.) - The station proper experienced snowfall



on the 22nd January only. The depths of snowfall and the accumulations at the ends of the months on the high peaks in the region were as under :-

Name of peak	Depth of snowfall		Accumulation	
	January	February	January	February
Raghopur	1.5 m.	2.4 m.	1.2 m.	2.4 m.
Jalori	1.2 m.	2.3 m.	1.1 m.	1.8 m.
Sakirn	1.5 m.	2.1 m.	1.2 m.	2.4 m.
Lambri	1.5 m.	3.0 m.	1.5 m.	3.0 m.
Shepakaru	1.8 m.	3.0 m.	2.1 m.	3.4 m.
Gargarasan	2.1 m.	3.4 m.	1.8 m.	3.4 m.
Bashelu	1.8 m.	2.1 m.	1.5 m.	2.4 m.
Pallach	91 cm.	1.2 m.	61 cm.	91 cm.
Tirth	2.4 m.	3.7 m.	1.8 m.	3.7 m.

The snowfall was below normal in January and normal in February.

Nirmand (Outer Seraj Sub-Tehsil) (1218 m.) - It was reported that the heaviest snowfall of the season was experienced in January when the snowfalls descended to heights of 1220 m. The depths of snowfall and the accumulation at the end of January are given below. The details for the month of February were not received.

Name of peak	Depth of snowfall	Accumulation
Sirikhand	3.7 m.	5.4 m.
Chol	2.4 m.	4.0 m.
Maghan	1.4 m.	1.8 m.
Dundku	1.8 m.	2.7 m.
Shikar	1.5 m.	2.1 m.
Ramgarh	90 cm.	1.2 m.
Hohun	90 cm.	1.2 m.

The snowfall was above normal in January.

#### MANDI DISTRICT

Mandi Forest Division - The total depths of snowfall on Nargu (3960 m.) and Tunga Devi (3050 m.) peaks in January were 2.4 m. to 3.0 m. and 90 cm. to 1.2 m. respectively. The corresponding depths in February were 2.4 m. to 3.0 m. and 60 cm. to 90 cm. respectively. These amounts were also reported as the accumulations at the ends of the respective months.

The snowfall was below normal during the period.

#### Suket Forest Division

Jhungi - There was no occurrence of snowfall in both the months.

### III - UTTAR PRADESH

TEHRI GARHWAL DISTRICT - The report for January was not received. No snowfall was experienced in February.

The snowfall was below normal in February.

GARHWAL DISTRICT - There were two spells of snowfall in January. The depth of snow after the first two falls on the 21st and 22nd varied from 8 cm. to 18 cm. in the inhabited regions while on the high peaks the depth was upto 45 cm. The depth of snow after the second spell from the 25th to 27th January varied from 5 cm. to 18 cm. in the inhabited regions, and was upto 34 cm. on the high peaks. The snowfall descended to heights of 1520 m. and the same amounts as the depths were reported as the accumulations at the end of the month. No snowfall was reported in February.

The snowfall was above normal in January and below normal in February.

ALMORA DISTRICT - The total depths of snowfall and the accumulations at the ends of the months on the peaks of Malla Danpur were as under :-

Name of peak	Depth of snowfall		Accumulation	
	January	February	January	February
Kautela	1.5 m.	60 cm.	4.3 m.	4.9 m.
Kafini	1.8 m.	60 cm.	5.2 m.	5.8 m.
Bankatia	2.1 m.	1.2 m.	8.5 m.	9.8 m.
Pindar	2.1 m.	1.2 m.	7.9 m.	9.1 m.
Nanda Devi	2.1 m.	1.5 m.	8.8 m.	10.4 m.
Sundardhunga	2.1 m.	1.2 m.	8.5 m.	9.8 m.

The snowfall was above normal in January and normal in February.

#### NAINITAL DISTRICT

Mukteswar (2310 m.) - In January, light to moderate snowfalls occurred in two spells, viz. 21st-22nd and 25th-26th. The total depth amounted to 70 cm. In February, light snowfalls occurred on six days of which half were in the first fortnight. The total depth was 11 cm. In both the months the snowfalls generally extended to the surrounding high peaks such as Ramgarh, Gagarh and Nainital.

The snowfall was much above normal in January and slightly below normal in February.

### IV - ASSAM

#### MANIPUR DISTRICT

Kameng - A spell of heavy snowfall was experienced in the division towards the end of January. The depth of snowfall was about 40 cm. The weather improved during the first week of February.

### Hot Weather/Pre-Monsoon Period - March to May.

#### I. JAMMU AND KASHMIR

##### NORTH BARAMULLAH DISTRICT

Gulmarg (2652 m.) - The reports for March and April were not received. The amount of snow accumulation on the peaks of Anharwat and Handibal mountains in May was more than usually present at that time of the year.

The snowfall was reported to be above normal in May.

##### SOUTH ANANTNAG DISTRICT

Srinagar (1585 m.) - No snowfall was experienced at the station proper or in the valley during the period. However, snowfalls were observed on the adjoining peaks and passes on some occasions in each of the months. A thick layer of snow was visible on all the surrounding peaks and passes and the snow accumulation was reported to have been melting towards the end of May.

The snowfall on the peaks and passes was below normal in March and above normal in April and May.

#### UDHAMPUR DISTRICT

Patnitop (Batote) (2033 m.) - Snowfall occurred on the 4th March only during the period. The following mountain ranges and stations received snowfall :- Pir Panjal (4090 m. - 4110 m.), Ensin Dhar (2700 m. - 3350 m.), Kud peaks (2700 m. - 3350 m.), Kud (1700 m.), Batote (1680 m.), Sansar (2290 m.) and Patnitop (2130 m.). About 15 cm. of snow accumulation which was present at Patnitop at the beginning of March, melted by the end of the month. There was accumulation of snow on the higher passes and peaks at the end of March, but towards the end of May, the accumulations were confined to the regions above 3960 m.

The snowfall was normal during the period.

#### LADAKH DISTRICT

Leh (3514 m.) - The report for March was not received. The region experienced snowfall in a spell of four days from the 6th to 9th April. The depth of snowfall at the station proper was 45 cm. while that on the higher regions of 5490 m. to 6100 m. was over 90 cm. The passes were closed after these snowfalls. In May light snowfall occurred from the 9th to 12th and again on the last two days of the month. Accumulation of snow amounting to about 1.8 m. was present at heights of 5490 m. to 6100 m. during both these months.

The snowfall was reported to be above normal during April and May.

### II. PUNJAB (I) AND HIMACHAL PRADESH

#### CHAMBA DISTRICT

##### Pangi

Kilar (Pangi Range) (2564 m.) - The station proper did not experience any snowfall during the period.

The snowfall was below normal during the period.

##### Churah

Tissa (1570 m.) - No snowfall occurred during the period.

##### Chamba

Chamba (924 m.) - There was no snowfall at the station proper during the period. The amounts of snow accumulation on some well-known passes in the region were reported as under :-

Name of pass	March	Accumulation	
	March	April	May
Basodhan	30 cm.	0	-*
Sach	3.0 m.	90 cm.	60 cm.
Padhri	1.2 m.	0	0
Kalichho	-*	-*	2.4 m.

\* Report not received.

Ludrera (924 m.) - No snow fell during the period.

Bhanota (914 m.) - No snow fell during the period.

Upper Chamba Range

Chhattrari (1703 m.) - One snowfall was experienced at heights above 1680 m. on the 5th March. The depth of snowfall at the station proper was 10 cm. No snow fell during April and May. There was above 2.4 m. of snow accumulation on the well-known higher passes and peaks at the end of March. The accumulation decreased to 90 cm. towards the end of the period.

The snowfall was reported to be below normal during the period.

Bhattiyat

Kalaton (Dalhousie Range) (2414 m.) - There were two spells of snowfall of four days each in the first and third weeks of March at heights above 1680 m. The total depths of snow in these spells were 1.4 m. and 20 cm. respectively. The heaviest fall of 90 cm. was recorded on the 5th March. On 29th April snowfall amounting to about 45 cm. was observed at heights above 4570 m. No snowfall occurred in May. The amount of snow accumulation on the well-known peaks was about 30 cm. in March and 45 cm. in April. There was no accumulation at the end of the period.

The snowfall was above normal during March and April and normal during May.

Chowari (1021 m.) - No snow fell during the period.

Bathree (1372 m.) - No snow fell during the period.

Trehta Range - Snowfalls occurred from the 3rd to 5th March. On the 4th March, elevations of 1520 m. received snowfall, the depth being about 60 cm. at Holi Village. No snow fell in April. The depths of snowfall and the accumulations were reported as under :-

Name of pass	Depth of snowfall		Accumulation	
	March	April	March	April
Jalsu (3810 m.)	30 cm.	0	3.0 m.	0
Kwarsi (4420 m.)	45 cm.	0	4.3 m.	0

The report for May was not received.

The snowfall was above normal in March and below normal in April.

Bharmaur

Bharmaur (2155 m.) - The station experienced snowfall on the 4th and 5th March, the total depth being 36 cm. No snow fell in April and May.

The snowfall was below normal during the period.

MAHASU DISTRICT

Chopal (2342 m.) - Snowfall occurred on the 5th March at the station proper, the depth being 10 cm. The snowfall on the highest peak of Chur Dhar amounted to 56 cm. while on the lower peaks the depths were about 30 cm. No snowfall was reported during April and May. The amount of accumulation of snow on the higher passes at the end of March was about 45 cm. The accumulated snow in almost all regions except the high peaks had melted by the end of April.

The snowfall was normal during the period.

Junga (1080 m.) - No snow fell during the period.

Rampur (1067 m.) - Snow fall was experienced in the region upto an elevation of 1520 m. on the 4th and 5th March. The depths of snowfall at lower elevations were about 15 cm. while those at higher elevations of 2740 m. were about 60 cm. No snow fell during

April and May.

The snowfall was below normal in March and April and normal in May.

Kumarsain (1388 m.) - In March snow fell in a spell of three days in the first week and again on three days in the second fortnight. The snowfall descended to heights of 2740 m. The total depth of snowfall on Narkanda peak was 30 cm. The same amount was reported as the accumulation at the end of March. No snowfall was experienced during April and May.

The snowfall was below normal in March.

Theog (2286 m.) - The depth of snowfall was 15 cm. in March. No snow fell in April and May. The amounts of snow accumulation on the well-known peaks of Tir Mahasu and Kanagi were about 90 cm. each at the end of May.

Kotkhai (1676 m.) - No snow fell during the period.

Suni (510 m.) - No snow fell during the period.

#### Lower Pabbar Range

(i) Bashla (2286 m.) - No snowfall was recorded during the period.

(ii) Khadrala (2957 m.) - The depth of snowfall in March was 99 cm. There were no snowfalls during April and May.

The snowfall was above normal in March and below normal during April and May.

Rohru (1524 m.) - No snowfall was experienced during the period.

Solan (1530 m.) - No snow fell during the period.

Jubbal (1891 m.) - No snowfall occurred during the period.

Jubbal Forest Division - Snowfall was experienced in the division from the 2nd to 6th March. The depth of snowfall at elevations of 2290 m. was about 10 cm. The accumulations of snow at Mandha Ghati (2500 m.) and Chuhar peak (3660 m.) were 60 cm. and 1.5 m. respectively. The reports for April and May were not received.

The snowfall was about normal in March.

Kasumpti (1980 m.) - The total depth of snowfall recorded in March was 15 cm. No snow fell during April and May.

#### KINNAUR DISTRICT

##### Kilba - Kailash Range

(i) Kilba (1820 m.) - Snowfall occurred on the 5th March, the depth being about 10 cm. No snow fell during April and May.

The snowfall was below normal during the period.

(ii) Sangla (2591 m.) - The station experienced snowfall on the 4th to 6th and 20th March, the total depth amounting to 90 cm. In April, 3 cm. of snowfall was reported. There was no snowfall in May.

The snowfall was normal in March and below normal during April and May.

(iii) Purbani (2286 m.) - Snowfall occurred on the 4th, 5th and 20th March, the total depth being 40 cm. Snowfall was reported during April, the total depth being 10 cm. No snowfall was experienced in May.

The snowfall was below normal during March and April, but was normal in May.

Chini (2774 m.) - The station reported snowfall during March and April, the total amounts being 84 cm. and 18 cm. respectively. No snow fell in May.

The snowfall was above normal in March and April but below normal in May.

Kalpa - Snowfall, amounting to 84 cm., was recorded during March. No snowfalls were reported during April and May.

#### KANGRA DISTRICT

Banjar (Inner Seraj Sub-Tehsil) (640 m.) - The total depths of snowfall and the accumulations at the end of each month on the well-known peaks of the region were reported as under :-

Name of peak	Depth of Snowfall		Accumulation	
	March	April	March	April
Raghopur	60 cm.	0	60 cm.	0
Jalori	60 cm.	0	60 cm.	0
Sakirn	60 cm.	0	90 cm.	0
Lambri	90 cm.	0	1.5 m.	30 cm.
Shepakaru	1.2 m.	0	3.7 m.	1.8 m.
Gargarasan	1.2 m.	0	4.0 m.	2.1 m.
Bashelu	90 cm.	0	90 cm.	0
Zallach	30 cm.	0	60 cm.	0
Tirth	90 cm.	0	4.0 m.	2.1 m.

The report for May was not received.

The snowfall was normal in March and below normal in April.

#### MANDI DISTRICT

Mandi Forest Division - No snowfalls were experienced during the period. The amounts of accumulation on the higher peaks were reported as under :-

Name of peak	Accumulation		
	March	April	May
Tunga Devi (3050 m.)	1.4 m.	76 cm.	0
Nargu (3960 m.)	1.7 m.	1.4 m.	60 cm.

Suket Forest Division - No snowfall was reported during the period.

### III. UTTAR PRADESH

TEHRI GARHWAL DISTRICT - Snowfall occurred on the 6th March on the ridges above 2130 m., the depth of snow being about 45 cm. The peaks, which experienced snowfall, were Surkanda, Dhanolti, Nagtiba and Taruka-Danda. No snow fell in April and May.

The snowfall was above normal in March and normal in April and May.

GARHWAL DISTRICT - There was only one snowfall on the night of 4th - 5th March, the depth of snow varying from 5 cm. to 15 cm. No snow fell in April and May. There was no accumulation of snow on the peaks and passes at the end of the period.

ALMORA DISTRICT - The total depths of snowfall and the accumulations at the ends of the months on the peaks of Malla Danpur were as under :-

Name of peak	March	April	May
<u>SNOWFALL</u>			
Kautela	30 cm.	30 cm.	15 cm.
Kafini	30 cm.	30 cm.	15 cm.
Bankatia	45 cm.	75 cm.	30 cm.
Pindar	60 cm.	90 cm.	30 cm.
Nanda Devi	60 cm.	90 cm.	30 cm.
Sundardhunga	60 cm.	90 cm.	30 cm.
<u>ACCUMULATION</u>			
Kautela	4.5 m.	3.0 m.	2.0 m.
Kafini	5.5 m.	3.5 m.	2.5 m.
Bankatia	9.0 m.	4.5 m.	3.5 m.
Pindar	8.0 m.	7.5 m.	6.5 m.
Nanda Devi	10.0 m.	8.0 m.	7.0 m.
Sundardhunga	9.5 m.	7.5 m.	6.0 m.

The snowfall was normal during the period.

#### NAINITAL DISTRICT

Mukteswar (2310 m.) - Light to moderate snowfall occurred on the 5th March, the depth being 5 cm. The snowfall extended to all the surrounding areas. No snow fell during April. The report for May was not received.

The snowfall was normal in March.

#### SOUTHWEST

#### Southwest Monsoon Period - June to September

#### June - July

#### I. JAMMU AND KASHMIR

#### NORTH BARAMULLAH DISTRICT

Gulmarg (2652 m.) - During the period, four snowfalls were observed on Handibal and Apharwat mountains on the 3rd, 12th, 14th and 30th June. Accumulation of snow was present on these mountains during both months.

#### SOUTH ANANTNAG DISTRICT

Srinagar (1585 m.) - There was no occurrence of snowfall in the valley. Slight accumulation of snow was present on the adjoining peaks during the period.

The snowfall was below normal in June and normal in July.

#### UDHAMPUR DISTRICT

Patnitop (Batote) (2033 m.) - As usual no snowfall was experienced during the period. Slight accumulation of snow was present on the peaks above 4570 m. at the end of June, but it melted towards the end of the period.

The snowfall was normal in both the months.

#### LADAKH DISTRICT

Leh (3514 m.) - No snowfalls were reported during June and July. Snow accumulation was present at heights of 6100 m. at the end of June, the depth being about 90 cm. There were no accumulations on the passes towards the end of July.

The snowfall was below normal during the period.

## II - PUNJAB (I) AND HIMACHAL PRADESH

### CHAMBA DISTRICT

#### Unner Chamba Range

Chhattrari (1793 m.) - There was no occurrence of snowfall in June. The report for July was not received.

#### Bhattiyat

Trehta Range - No snowfall was experienced in June. The report for July was not received.

MAHASU DISTRICT - No snowfall was reported during the period by the stations Chopal (2342 m.), Junga (1989 m.), Rampur (1067 m.), Kumarsain (1388 m.), Theog (2286 m.), Kotkhai (1676 m.), Suni (510 m.), Bashla (2286 m.) and Khadrāla (2957 m.) in Lower Pabar Range, Rohru (1524 m.), Solan (1530 m.), Jubbal (1891 m.) and Kasumpti (1989 m.).

KINNAUR DISTRICT - No snowfalls were recorded during the period at the stations Kilba (1829 m.), Sangla (2591 m.) and Purbani (2286 m.) in Kilba-Kailash Range, Chini (2774 m.) and Kalpa.

### MANDI DISTRICT

Mandi Forest Division - There was no occurrence of snowfall in both the months. No accumulation of snow was present on the well-known passes of the division during the period.

## III - UTTAR PRADESH

TEHRI GARHWAL DISTRICT - No snow fell during the period.

GARHWAL DISTRICT - No snow fell during the period.

ALMORA DISTRICT - The total depths of snowfall and the accumulations at the end of each month on the well-known peaks of Malla Danpur were as under :-

Name of peak	Depth of Snowfall		Accumulation	
	June	July	June	July
Kantela	0	0	0	0
Kafini	0	15 cm.	30 cm.	45 cm.
Bankatia	15 cm.	30 cm.	1.5 m.	1.8 m.
Pindar	15 cm.	30 cm.	3.7 m.	3.7 m.
Nanda Devi	15 cm.	30 cm.	4.6 m.	4.6 m.
Sundardhunga	15 cm.	15 cm.	1.8 m.	1.8 m.

The snowfall was above normal during the period.

### August - September

#### I. JAMMU AND KASHMIR.

### NORTH BARAMULLAH DISTRICT

Gulmarg (2652 m.) - On the 28th August, snowfall was observed on the peaks of Handibal mountains only, while on the 22nd, 26th and 27th September, the Handibal mountains as well as the valley and Apharwat mountains experienced snowfall. Accumulation of snow was present at the ends of both months on the Handibal and Apharwat mountains.

The snowfall was normal during the period.



SOUTH ANANTNAG DISTRICT

Srinagar (1585 m.) - No snowfalls occurred in the region during August, while moderate snowfalls were experienced on the adjoining peaks and ranges above 3000 m. on the 21st, 22nd and 26th September.

UDHAMPUR DISTRICT

Patnitop (Batote) (2033 m.) - No snowfall was reported during the period, except on the 22nd September, when the high peaks (above 3350 m.) of the Pir Panjal ranges received snowfall. Snow accumulation was present on these high peaks at the end of September only.

LADAKH DISTRICT

Dras (3066 m.) - No snow fell during the period.

Leh (3514 m.) - The report for August was not received. Snowfalls were experienced on the 6th and 11th to 13th September at elevations above 5500 m. and on the 21st and 22nd September at heights above 4250 m. The total depths at these heights were 35 cm. and 45 cm. respectively. Snow accumulation was present at heights of 5500 m. to 6100 m. at the end of September, the depth being 15 cm.

The snowfall was much above normal in September.

II. PUNJAB (I) AND HIMACHAL PRADESHCHAMBA DISTRICTUpper Chamba Range

Chhattrari (1793 m.) - There was no occurrence of snowfall in August. The range experienced heavy snowfalls in September at heights above 2440 m. No accumulation of snow was present during August but at the end of September more than 30 cm. snow accumulation was present on the higher hills and passes.

The accumulation was stated to be above normal at the end of the period.

MAHASU DISTRICT

No snowfalls were experienced during the period at Chopal (2342 m.) Junga (1989 m.), Rampur (1067 m.), Kumarsain (1388 m.), Theog (2286 m.), Kotkhai (1676 m.), Suni (510 m.), Bashla (2286 m.) and Khadrula (2957 m.) in Lower Pabar Range, Rohru (1524 m.), Solan (1530 m.), Jubbal (1891 m.) and Kasumpti (1989 m.).

KINNAUR DISTRICT - No snowfalls were reported during the period by the stations Kilba (1329 m.), Sangla (2591 m.) and Purpani (2286 m.) in Kilba-Kailash Range, Chini (2774 m.) and Kalna.

MANDI DISTRICT

Mandi Forest Division - There were no snowfalls nor any accumulation of snow on the passes in the district during August and September.

III - UTTAR PRADESH

TEHRI GARHWAL DISTRICT - No snowfall occurred during the period.

GARHWAL DISTRICT - No snowfall was reported during the period.

ALMORA DISTRICT - The total depths of snowfall and the accumulations at the ends of the months on the well-known high peaks of Malla Danpur were as under :-

Name of peak	Depth of Snowfall		Accumulation	
	August	September	August	September
Kautela	15 cm.	15 cm.	15 cm.	15 cm.
Kafini	15 cm.	15 cm.	60 cm.	60 cm.
Bankatia	30 cm.	30 cm.	2.1 m.	2.1 m.
Pindar	30 cm.	30 cm.	4.0 m.	4.0 m.
Nanda Devi	30 cm.	30 cm.	4.9 m.	4.9 m.
Sundardhunga	15 cm.	15 cm.	2.0 m.	2.0 m.

The snowfall was above normal in both the months.

#### Post Monsoon Period - October to December

#### I. JAMMU AND KASHMIR

##### SOUTH ANANTNAG DISTRICT

Srinagar (1585 m.) - The station proper did not experience any snowfall in October, but there were a few light falls on the surrounding peaks and passes above 3000 m. In November, there were three snowfalls of moderate intensity, the fall on the 20th being fairly heavy. The falls extended throughout the valley. Four moderate snowfalls were experienced at the station proper in December. The falls were reported to be much heavier on the surrounding hills. After the November snowfalls, all the surrounding peaks and passes were covered with a thick layer of snow which persisted throughout the remaining period.

The snowfall was reported to be above normal during the period.

##### UDHAMPUR DISTRICT

Patnitop (Batote) (2033 m.) - Snowfall was observed on 31st October at heights above 2740 m. The reports for November and December were not received.

##### LADAKH DISTRICT

Kargil (2679 m.) - The reports for October and November were not received. The first snowfall was received on the night of 11th December. Snowfalls were again reported on the 16th, 24th and 27th December. The total depths were 17 cm. at the station proper, 4 cm. on Naktul peak and 18 cm. on Hurker peak.

The snowfall was below normal in December.

Sonamarg (2515 m.) - Light snowfalls were recorded on the 28th and 29th October. In November, light to moderate snowfalls were experienced on seven days during the period 14th to 24th of the month. Towards the second half of December there were another seven days of moderate to heavy snowfalls.

Dras (3066 m.) - No snow fell during October and November. Snowfall was experienced during December, the total depth being 3 cm.

The snowfall was below normal during the period.

Leh (3514 m.) - The station reported very light snowfall on the 30th October, the depth being less than 1 cm. In November, snowfall was experienced on the 18th, 22nd and 24th, the total depth being 11 cm. There were again three days of snowfall on the 12th, 20th and 27th December, the depth being about 13 cm. The amounts of snow accumulation on the high passes above 5490 m. were 15 cm. in October and 30 cm. each in November and December.

The snowfall was normal during the period.

II - PUNJAB (I) AND HIMACHAL PRADESHCHAMBA DISTRICTUpper Chamba Range

Chhattrari (1793 m.) - In October, there were two storms at heights above 3050 m. on the Kotla and Gaz Dhar passes; the depth of snowfall during each storm varied from 8 cm. to 10 cm. In November, only one storm was reported at heights ranging from 1830 m. to about 3660 m. The depths of snow were 5 cm. to 8 cm. at the lower elevations and about 2.4 m. at the higher elevations upto 3660 m. One snowfall was experienced in December, but this time the snowfalls descended to the low elevations of 1370 m. The depth of snow varied from 5 cm. to 15 cm. The amounts of snow accumulation on the well-known higher passes of Kotla and Gaz Dhar were 8 cm. to 10 cm. in October, 2.4 m. to 3.0 m. in November and 3.0 m. to 3.7 m. in December.

The snowfall was normal in October and November and below normal in December.

Bhattiyat

Kalatop (Dalhousie Range) (2414 m.) - The report for October was not received. Snowfall occurred in a spell of four days from the 19th to 22nd November at heights above 1830 m. The total depth amounted to 45 cm. In December, these heights again experienced snowfall in two spells viz. 14th to 16th and 26th to 29th. The total depth recorded was 75 cm. The amounts of snow accumulation on Den-Kud Dhar were 90 cm. in November and 1.5 m. in December.

The snowfall was normal in November and December.

Trehta Range - No snowfall occurred in October. There were three days of snowfall in November. On the 19th and 20th the snowfalls were confined to the higher regions above 2130 m. but on the 22nd the falls descended to the lower elevations of 1520 m. In December, snowfall occurred in two spells; the first on the 18th - 19th was experienced at heights above 2440 m. and the second on the 26th - 27th was experienced at heights as low as 1220 m. The depths of snowfall and the accumulations at the ends of the months were reported as under :-

Name of place	Depth of snowfall		Accumulation	
	November	December	November	December
Jalsu pass (3810 m.)	90 cm.	1.4 m.	90 cm.	1.8 m.
Kwarsi pass (4420 m.)	1.2 m.	2.1 m.	1.2 m.	2.4 m.
Holi (1520 m.)	8 cm.	-	-	-

The snowfall was below normal in October and November and above normal in December.

Bharmaur

Bharmaur Range - The reports for October and November were not received. The range received snowfall on five days in the second half of December, the total depth amounting to 48 cm. The snowfalls descended to elevations of 1830 m. The amount of snow accumulation was 20 cm. at Bharmaur proper and about 45 cm. at Guararu.

The snowfall was below normal in December.

MAHASU DISTRICT

Chopal (2342 m.) - No snowfall occurred in October. The tehsil experienced the

first snowfall of the season on 22nd November. The depths of snow were 3 cm. at Chopal proper and about 30 cm. on Chur Dhar. In December snowfalls were reported on the 6th and 29th of the month, the depths being 8 cm. at Chopal and 75 cm. on Chur Dhar.

The snowfall was below normal during December.

Shilaroo (2591 m.) - The report for October was not received. The station received snowfall on the 20th and 22nd November, the total depth being 5 cm. In December, snowfall was recorded on four days, three of which were in the second fortnight of the month. The total depth was 6 cm.

The snowfall was below normal in November and December.

Zhanca (Pandra Bis Range) (2271 m.) - The report for October was not received. The station proper experienced two days of snowfall on the 20th and 22nd November, the total depth being 5 cm. In December, there were four falls in the second fortnight, the total depth amounting to 41 cm.

The snowfall was below normal in November and normal in December.

Junga (1989 m.) - No snowfall was reported during the period.

Rampur (1067 m.) - There was no occurrence of snowfall in the tehsil during October and November. Snowfalls were reported on the 18th, 26th and 27th December at heights above 1980 m. throughout the tehsil. The depth of snowfall on the high peaks was estimated to be about 30 cm. The same amount was reported as the accumulation at the end of the period.

The snowfall was below normal during December.

Kumarsain (1388 m.) - The station proper did not receive any snowfall throughout the period. On 20th-22nd November, the high peaks above 2740 m. experienced snowfall, the depth at Narkanda being 5 cm. In December, regions above 2440 m. received snowfall on the 18th, 27th and 28th of the month. The depth at Narkanda was 8 cm. The same amounts were given as the accumulations at Narkanda at the ends of November and December.

The snowfall was below normal during December.

Theog (2286 m.) - No snow fell during the period.

Kotgarh (1829 m.) - The report for October was not received. No snowfall was recorded during November and December. The amounts of snow accumulation at the ends of these months at Sidhour were 10 cm. and 15 cm. respectively.

Kotkhai (1676 m.) - There was no occurrence of snowfall at Kotkhai proper during the period. The surrounding peaks of Khara Pathar, Naira, Joshla, Mundroo and Bagi received snowfall on the 20th-22nd November and on the 6th, 18th, 27th and 28th December. The total depths of snowfall were 3 cm. and 60 cm. on each of the peaks in the respective months.

The snowfall was below normal during December.

Suni (510 m.) - No snowfall was reported during October. There were two days of snowfall in the second week of November. The first fall occurred at heights above 1980 m. and the second at heights above 2440 m. The corresponding depths were 5 cm. and 8 cm. In December, there were four snowfalls, the falls on the 5th and 17th were experienced at heights above 2740 m. the total depth being 10 cm. The other two falls on the 26th and 27th December were experienced at lower levels of 1830 m. also. The total depth was about 13 cm.

The snowfall was below normal during December.

Lower Pabar Range

(i) Bashla (2286 m.) - No snow fell during October and November. Snowfall was recorded on the 5th, 26th and 27th December, the total depth being 22 cm.

The snowfall was below normal during the period.

(ii) Khadrala (2957 m.) - There were no snowfalls during October and November. There were five snowfalls in December, of which two were in the first fortnight. The total depth amounted to 63 cm.

The snowfall was below normal in October and November and above normal in December.

Rohru (1524 m.) - No snow fell during the period.

Arki (1219 m.) - The report for October was not received. No snowfall was reported during November and December.

Solan (1530 m.) - No snow fell during the period.

Jubbal (1891 m.) - No snowfall was experienced during October and November. Snowfalls occurred on the 6th, 27th and 28th December, the total depth being 11 cm. at the station proper. The depth of snowfall on the highest peak, Chambi Kupa was estimated to be about 90 cm. to 1.2 m. The snow accumulations at the end of December were 6 cm. at Jubbal and 1.2 m. at Chambi Kupa.

The snowfall during the season was reported to be below normal.

JUBBAL FOREST DIVISION - The report for October was not received. The region experienced snowfall during the 19th to 22nd November and scattered snowfalls on one to two days in December, especially on the 5th of the month. The depths of snowfall and the accumulations were reported as under :-

Name of place	Depth of snowfall		Accumulation	
	November	December	November	December
Khirkhi (2440 m.)	15 cm.	-*	15 cm.	30 cm.
Chur Dhar (3560 m.)	30 cm.	25 cm.	30 cm.	76 cm.
Mandha Ghati (2500 m.)	15 cm.	13 cm.	15 cm.	-*
Banah (2130 m.)	3 cm.	3 cm.	3 cm.	15 cm.
Manalag (2530 m.)	5 cm.	5 cm.	5 cm.	-*
Reoshti (2290 m.)	4 cm.	-*	4 cm.	-*
Tharoach (2030 m.)	1 cm.	-*	1 cm.	-*
Bhog Dhar (2130 m.)	10 cm.	3 cm.	10 cm.	61 cm.
Halan (2100 m.)	30 cm.	4 cm.	30 cm.	-*
Deya (2230 m.)	-*	15 cm.	-*	15 cm.
Talra (3220 m.)	-*	1.7 m.	-*	1.1 m.

-\* Report not received.

The snowfall was normal during November and December.

Kasumpti (1989 m.) - There was no snowfall during the period.

KINNAUR DISTRICTKilba-Kailash Range

(i) Kilba (1829 m.) - No snow fell during October and November. Snowfalls were recorded on the 27th and 28th December, the total depth being 5 cm.

The snowfall was below normal during the period.

(ii) Sangla (2591 m.) - No snowfall occurred in October. There was a spell of three days of snowfall on the 19th to 21st November, the depth being 27 cm. In December snowfalls were recorded on five days, three of which were in the second fortnight. The maximum fall was 38 cm. on the 5th December and the total depth was 71 cm.

The snowfall was below normal in October and above normal in November and December.

(iii) Purbani (2286 m.) - Snowfalls were reported in November and December only the respective depths being 20 cm. and 33 cm.

The snowfall was below normal in October and above normal in November and December.

Chini (2774 m.) - No snow fell in October. Snowfalls were experienced in November and December, the total depths recorded being 25 cm and 29 cm. respectively.

The snowfall was below normal in October and December, but above normal in November.

Kalpa - The station received snowfall in November and December only, the corresponding depths being 36 cm. and 32 cm.

#### KANGRA DISTRICT

Banjar (Inner Seraf Sub-Tehsil) (640 m.) - The reports for October and November were not received. The total depths of snowfall and the accumulations at the end of December on the well-known peaks of the region were reported as under :-

Name of peak	Depth of Snowfall	Accumulation
----	December	December
-----	-----	-----
Raghopur	1.2 m.	75 cm.
Jalori	1.2 m.	75 cm.
Sakirn	90 cm.	45 cm.
Lambri	1.8 m.	1.5 m.
Shepakaru	2.4 m.	1.8 m.
Gargarasan	2.4 m.	1.5 m.
Bashelu	2.1 m.	1.2 m.
Pallach	1.2 m.	60 cm.
Tirth	2.1 m.	1.5 m.
-----	-----	-----

The snowfall was normal during December.

#### MANDI DISTRICT

Mandi Forest Division - There was no snowfall in October and November nor was there any accumulation at the ends of these months. Snowfall was experienced in December, the total depths being 8 cm. to 15 cm. at Winch Camp, Barot (2440 m.) and 30 cm. each at Tunga Devi (3050 m.), Prasar Dhar (2740 m.) and Shikari (3350 m.). The same amounts were reported as the accumulations at the end of the month.

The snowfall was below normal during the period.

### III - UTTAR PRADESH

TEHRI GARHWAL DISTRICT - No snowfall occurred during October and November. The district experienced snowfall on the 5th and 27th December. On the first occasion snowfall occurred on the ridges above 1830 m., the depth varying from 8 cm. to 15 cm. On the second occasion the snowfall descended to lower heights of 1520 m., the depth varying from 15 cm. to 30 cm. The well-known higher passes such as Dhanolti, Nagtiba, Surkanda, Tir Tibi with elevations upto 2740 m. were covered with snow.

The snowfall was reported to be normal in December.

GARHWAL DISTRICT - No snow fell during October and November. There was one snowfall in the northern part of the district on 27th December. The snowfall occurred at heights of 1520 m. to 2130 m. and the depths varied from 3 cm. to 8 cm. The same amounts were reported as the accumulations at the end of the month.

The snowfall was reported to be below normal during the period.

ALMORA DISTRICT - The total depths of snowfall and the accumulations at the ends of the months on the well-known peaks of Malla Danpur were reported as under :-

Name of peak	October	November	December
<u>SNOWFALL</u>			
Kautela	15 cm.	60 cm.	30 cm.
Kafini	46 cm.	60 cm.	30 cm.
Bankatia	90 cm.	1.5 m.	90 cm.
Pindar	1.1 m.	1.5 m.	1.2 m.
Nanda Devi	1.2 m.	1.5 m.	1.2 m.
Sundardhunga	76 cm.	90 cm.	60 cm.
<u>ACCUMULATION</u>			
Kautela	30 cm.	90 cm.	90 cm.
Kafini	1.2 m.	1.8 m.	2.0 m.
Bankatia	3.4 m.	4.9 m.	5.2 m.
Pindar	4.9 m.	5.5 m.	5.8 m.
Nanda Devi	5.8 m.	6.4 m.	7.0 m.
Sundardhunga	2.7 m.	3.4 m.	4.0 m.

The snowfall was normal during the period.

#### NAINITAL DISTRICT

Mukteswar (2310 m.) - The reports for October and November were not received. Slight snowfall was experienced on the 27th December, the depth being 3 cm.

The snowfall was below normal in December.

### S U M M A R Y

#### Winter Period - January and February

Snowfall during the period was below normal in Jammu and Kashmir, slightly below normal in Punjab (I) and Himachal Pradesh and slightly above normal in Uttar Pradesh.

#### Pre-Monsoon period - March to May

Snowfall was slightly above normal in Jammu and Kashmir, slightly below normal in Punjab (I) and Himachal Pradesh and normal in Uttar Pradesh.

#### Monsoon Period - June and July

As usual, practically no snow fell in Jammu and Kashmir, Punjab (I) and Himachal Pradesh while snowfall was above normal in Uttar Pradesh.

#### Monsoon Period - August and September

The snowfalls were mostly confined to the high altitudes. The snowfall was slightly above normal in Jammu and Kashmir and above normal in Uttar Pradesh.

Post-Monsoon Period - October and December

Snowfall was normal in Jammu and Kashmir, slightly below normal in Punjab (I), Himachal Pradesh and Uttar Pradesh.

N.B. :- It is not possible to adopt a single classification of seasons which will be satisfactory for the whole of India. The classification adopted in this publication is devised from the point of view of rainfall in the country.

\* \* \* \* \*